

# Ultrapure Hydroxyapatite for Biomedical applications

India's first, phase pure free flow and affordable Ultrapure: **Hydroxyapatite**

Synthetically synthesised nano-grade powder ideal for manufacturing bone grafting materials, filling of bone defects, surface coating of biomedical implants and scaffolds for enhanced osseointegration.

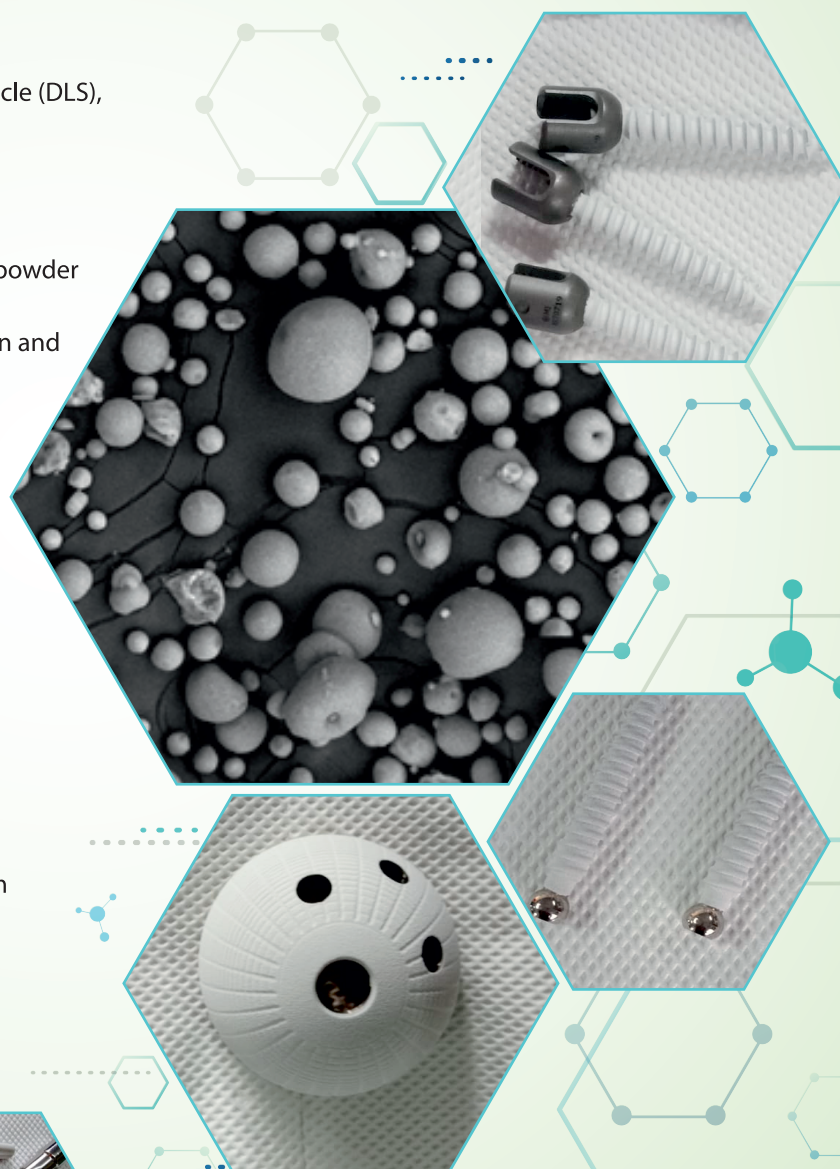
Phase Pure Hydroxyapatite is the pioneering offering with high chemical purity (assay >99%), indigenously prepared for unparalleled affordability and consistent nano-grade morphological properties to match quality expectations in multifaceted biomedical and clinical applications.

## Hydroxyapatite powder details

- ◆ **Product name:** Hydroxyapatite powder, submicron particle (DLS), ≥ 99% (trace metal basis), synthetic
- ◆ **Chemical formula:**  $\text{Ca}_5(\text{PO}_4)_3(\text{OH})/\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$
- ◆ **Formula weight:** 502.31 g/mol
- ◆ **CAS number:** 12167-74-7
- ◆ **Appearance:** Milky white free flowing non-hygroscopic powder
- ◆ **Manufacturing route:** Wet chemical precipitation
- ◆ **Major applications:** Biomedical graft, scaffold fabrication and implant coating applications

## Physical and Chemical Properties (conforms to specifications)

- ◆ **Phase purity:** X-Ray Diffraction
- ◆ **Chemical composition (Ca/P ratio):** 1.66 – 1.71 (ICP-MS)
- ◆ **Purity by XRF analysis, wt %:** ≥ 99%
- ◆ **Trace analysis (ICP):** 99% (min), per determination of trace metallic impurities
- ◆ **Melting point:** 1670 °C (2012 °F)
- ◆ **Decomposition temp:** 1400 °C (3038 °F)
- ◆ **Crystallite size:** 15 nm – 20 nm
- ◆ **Density (Helium gas pycnometry):** 3.15 – 3.20 g/cc
- ◆ **Average particle size (DLS):** ≤ 1 µm
- ◆ **Spray dried particle morphology:** Spherical,  $D_{90} \leq 30 \mu\text{m}$
- ◆ **Proposed sterilisation mode:** Gamma, EtO
- ◆ **Preferred coating route:** Atmospheric plasma spray
- ◆ **International standards:** ISO 13779-3, 6 ISO 13485 and ASTM-F1185-035



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